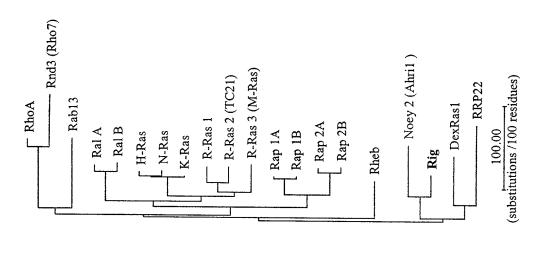
# Rig open reading frame nucleotide sequence

agetegetegetgetgegettegtgaagggeaegtteegegaeaeetaeateeeeaeete gacaccaccggcagccaccagttcccggccatgcagcgcctgtccatctccaagggccac gccttcatcctggtgttctccgtcaccagcaagcagtcgctggaggagctggggcccatc tacaagctcatcgtgcagatcaagggcagcgtggaggacatccccgtgatgctcgtgggc aacaagtgcgatgagacgcagcgggaggtggacacgcgcgaggcgcaggcggtggcccag gaggacacctaccggcaggtgatcagctgcgacaagagcgtGtgcacgctgcagatcaca gagtggaagtgcgctttcatggagacctcggccaagatgaactacaacgtcaaggagctc ttccaggagctgctgacgctggagacgccggaacatgagcctcaacatcgacggcaag cgctccgggaagcagaagaggacagacgcgtcaagggcaaatgcacctcatgtga

# B. Rig amino acid sequence

KSVCTLQITDTTGSHQFPAMQRLSISKGHAFILVFSVTSKQSLEELGPIYKLIV **QIKGSVEDIPVMLVGNKCDETQREVDTREAQAVAQEWKCAFMETSAKMN** MPEQSNDYRVVVFGAGGVGKSSLVLRFVKGTFRDTYIPTIEDTYROVISCD YNVKELFQELLTLETRRNMSLNIDGKRSGKQKRTDRVKGKCTLM

Rig	mpeqsndyrvvvf	1
Noey2	mgnasfgskeqkllkrlrllpallilrafkphrkirdyrvvvv-	4
RalÂ	maankpkgqnslalhkvimv	2
Rap1A	mreyklvvl	~
Rap2A	mreykvvvl	
HRas	mteyklvvv	
RRas	mssgaasgtgrgrprgggpgpgdpppsethklvvv	21
Rheb	mpqsksrkiail	3! 1:
14102	what properties and the second	1.
Rig	GAGGVGKSSlvlrfvkgtfrdtYIPTIEDTYrqviscdksvctl	5.
Noey2	GTAGVGKSTllhkwasgnfrheYLPTIENTYcqllgcshgvlsl	81
RalĀ	GSGGVGKSAltlqfmydefvedYEPTKADSYrkkvvldgeevqi	64
Rap1A	GSGGVGKSAltvqfvqgifvekYDPTIEDSYrkqvevdcqqcml	53
Rap2A	GSGGVGKSAltvqfvtgtfiekYDPTIEDFYrkeievdsspsvl	53
HRas	GAGGVGKSAltiqliqnhfvdeYDPTIEDSYrkqvvidgetcll	53
RRas	GGGGVGKSAltiqfiqsyfvsdYDPTIEDSYtkicsvdgiparl	79
Rheb	GYRSVGKSSltiqfvegqfvdsYDPTIENTFtklitvngqeyhl	56
	<u> </u>	30
Rig	qit <b>DTTGSHQ</b> fpamqrlsiskqhafilvfsvtskqsleelqpiy	101
Noey2	hitDSKSGDGnralqrhviarghafvlvysvtkketleelkafy	131
RalĀ	dilDTAGQEDyaairdnyfrsgegflcvfsitemesfaatadfr	108
Rap1A	eilDTAGTEQftamrdlymkngqgfalvysitaqstfndlqdlr	97
Rap2A	eilDTAGTEQfasmrdlyikngqgfilvyslvnqqsfqdikpmr	97
HRas	dilDTAGQEEysamrdqymrtgegflcvfainntksfedihqyr	97
RRas	dilDTAGQEEfgamreqymraghgfllvfaindrgsfnevgklf	123
Rheb	qlvDTAGQDEysifpqtysidingyilvysvtsiksfevikvih	100
Rig	klivqikgsvedipvmlvgNKCDetqrevdtreaqav	138
Noey2	elickikgnnlhkfpivlvgNKSDdthrevalndgatc	169
RalA	eqilrvkedenvpfllvgNKSDledkrqvsveeakn	144
RaplA	eqilrvkdtedvpmilvgNKCDledervvgkeqqqn	133
Rap2A	dqiirvkryekvpvilvgNKVDleserevsssegra	133
HRas	eqikrvkdsddvpmvlvgNKCDlaartvesrqaqdl	133
RRas	tqilrvkdrddfpvvlvgNKADlesqrqvprseasa	159
Rheb	gklldmvgkvqipimlvgNKKDlhmervisyeegka	136
	January de de de la constant de la c	150
Rig	aqewkcafm <b>ETSA</b> kmnynvkelfqelltletrrnmslnidg	179
Noey2	amewncafmEISAktdvnvqelfhmllnykkkpttglqepe	210
RalA	raeqwnvnyvETSAktranvdkvffdlmreirarkmedskek	186
Rap1A	larqwcncafl-ESSAkskinvneifydlvrqinrktpvekkkp	176
Rap2A	laeewgcpfmETSAksktmvdelfaeivrqmnyaaqpdkddp	175
HRas	arsygipyiETSAktrqgvedafytlvreirqhklrklnpp	174
RRas	fgashhvayfEASAklrlnvdeafeqlvravrkyqeqelpps	201
Rheb	laeswnaaflESSAkenqtavdvfrriileaekmdgaasqgk	178
Rig	krsgkqkrtdrvkgk//CTLM	100
Noey2	kksqmpntteklldk//CIIM	198
RalA	ngkkkrkslakrirer//CIL	229
Rap1A	kkks//CLLL	206
RapiA Rap2A	CCsa//CNIQ	184
HRas	desgpgcmsck//CVLS	183
RRas	ppsaprkkgggcp//CVLL	189 218
Rheb	\$\$//CVIII	197



ldq ganl ıni me liver kiqued **zb**jeen

placenta snwAy1

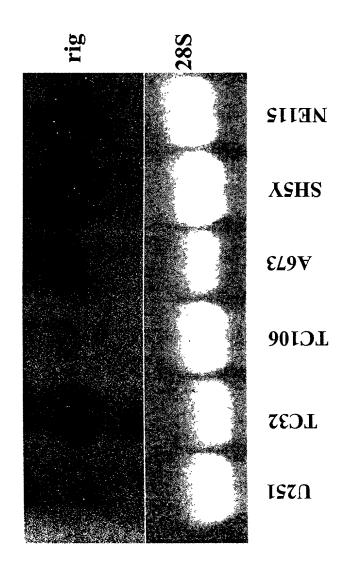
colon sk mus heart 🤲 prain

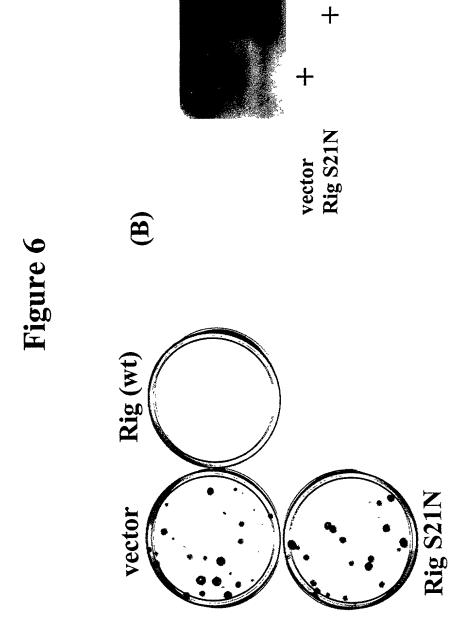


				,				,	,	,
	15	resst total RNA	yeast TRNA	E coli	E coff	poly r(A)	fetal human Uhymus Cet .1 DNA	human DNA 100 ng	human DNA 500 ng	
	11	fecal brash	fotal	fetal kidney	fetal	fetal	fetal	ing t		1
:	9	leukemia, NL-60	Hels	feukemia, K-562	leukemia, MOLT-4	Burkirt's fymphoma, Raii	Burkitr's lymphoma, Dandi	colorectal adeno- carcinoma, SW680	lung carcinoma. A549	
•	6	liver	piacenta paneress	adronal gland	thyroid gland	salivary gland	mammary gland			
	8	lung	placenta	bladder	uterus	prostate	testis	Ovary		
•	-	kidney	skeletal	spleen	thymus	peripheral blood loukocyte	lymph node	bone	traches	
	٥	colon. transverse	colon, descending	rectum						
	]،	esophagus	stomach	duodenum	Jejonom	ileum	Heocecum	appendix	colon, ascending	
•	•	beart	aorta	atrium, left	atrium, right	ventricle, left	ventricle, il right	inter- ventricular septum	apex of the heart	
۰	,	substantia nigra	nucleus accumbens	thalamus	pituitary gland	Spinal cord				
~	,	cerebellum, substantia loft nigra	corobral cerebellum, cortex right	corpus	amygdals	Caudate nuclous	hippo- сатриз	medulla Obfongata	ритател	ral gyrus
-		whole	cerebral	frontal	parietal Iobe	occipitat lobe	tomporal	p.g.* of cerebral cortex	Sanoq.	* paracentral gyrus
		<u>√</u>	<u> </u>	·	<u> </u>	ш	<u>.</u>	<b>5</b>	<u> </u>	

**(A)** 

Figure 5



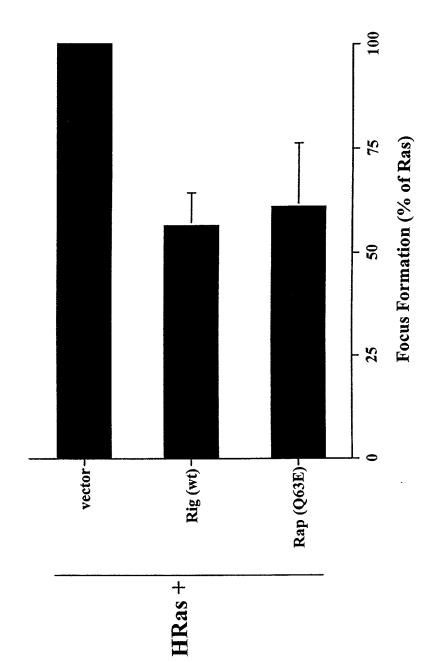


(A)

IB: HA

Rig (wt) □ vector 1000 plasmid DNA (ng) Figure 7 1007 % Ras-mediated Elk-1 activity

Figure 8



IP: anti-Raf-1



IB: anti-HA

HA-Raf-1	+	+	+
FLAG-Rig			+
HA-H-Ras	+		
HA-K-Ras		+	

Figure 10

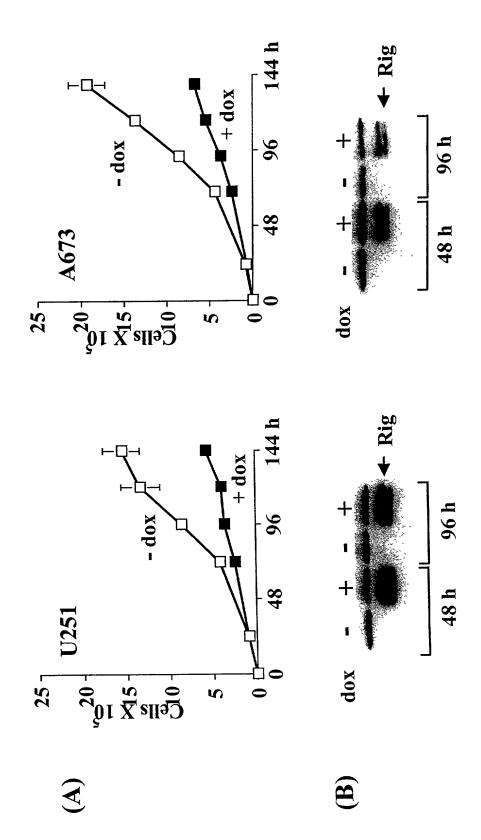


Figure 11

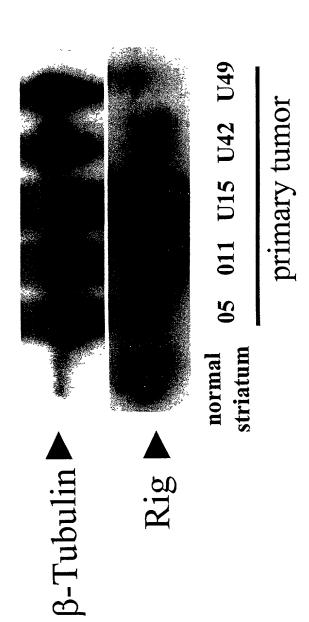


Figure 12

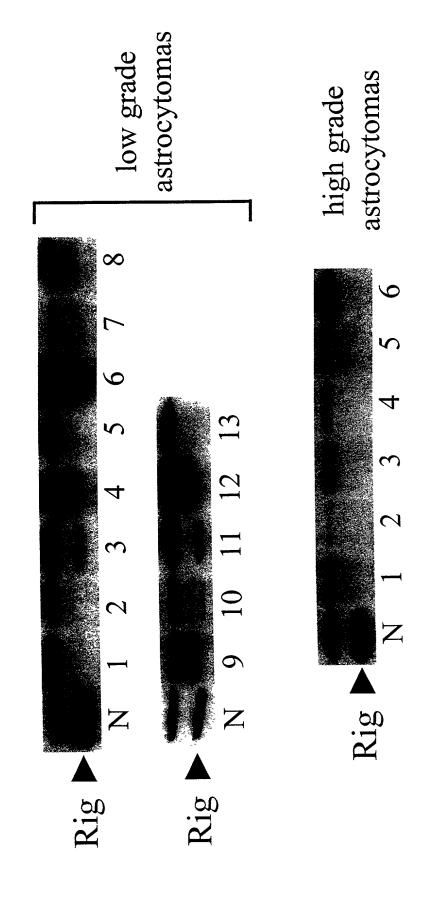


Figure 13

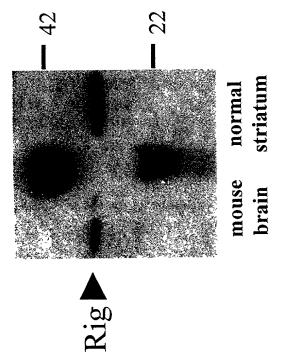
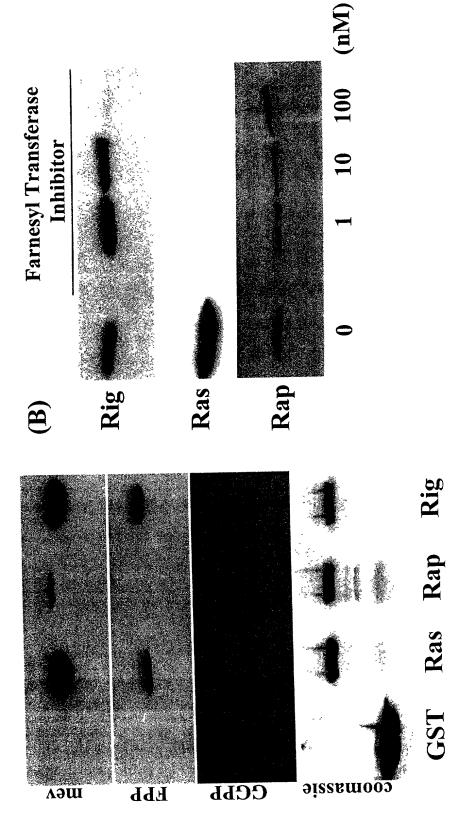


Figure 14



(A)

Figure 15

